



Cimarron National Grassland

INTRODUCTION



Cimarron National Grassland is located in the southwest corner of Kansas. This [grassland](#) covers 44,500 hectares (110,000 acres) in Morton and Stevens counties. The Cimarron River runs through the middle of Cimarron National Grassland. The Santa Fe Trail, an 1800s route from Missouri to Santa Fe, New Mexico, passes through the Cimarron National Grassland.



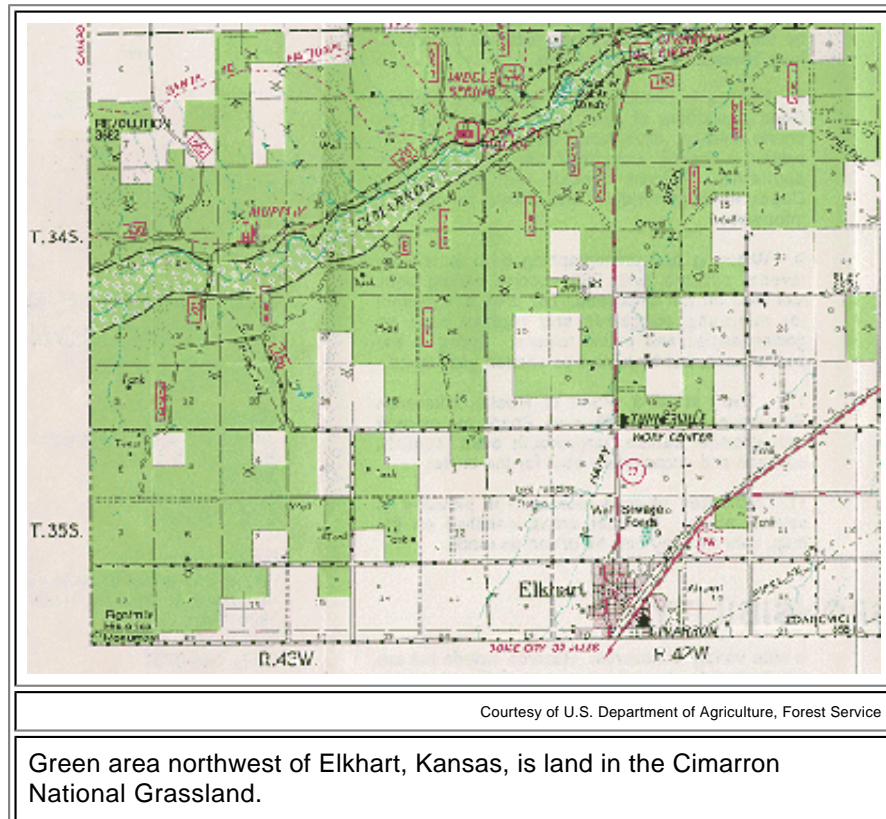
Courtesy of U.S. Department of Agriculture, Forest Service

The Santa Fe Trail was an important trade route between Missouri and New Mexico.

The southwestern portion of the vast grassland of the central United States and Canada is classified as a shortgrass prairie. It was home to huge herds of grazing [bison](#). Native Americans of the Great Plains depended on the bison for survival. They were nomadic and followed and hunted the great herds. [Pronghorn antelope](#) and [elk](#) also grazed across the prairie. The shortgrass prairie also provides excellent habitat for [black-tailed prairie dogs](#), [lesser prairie chickens](#), and [black-footed ferrets](#).

As settlers began moving west, the grassland was converted to grazing lands for [cattle](#). Over 100 years ago, the land of Cimarron National Grassland was a cattle ranch known as Point of Rocks Ranch, operated by the Beaty brothers. This was the first permanent settlement in the area. Around 1885, homesteaders began to settle in this area as well. The rolling grassland was turned into a sea of wheat and other grains.

Years of cattle grazing and farming, followed by a drought, degraded the soils and made them unproductive. By the 1930s many acres were barren. The strong winds that blow across the prairie swept up the loose soil, creating huge dust and sand storms. This area was part of the Dust Bowl, an area that covered parts of Kansas, Oklahoma, and Texas, named for the great dust storms. Morton County, where part of Cimarron National Grassland is, was one of the most devastated areas.



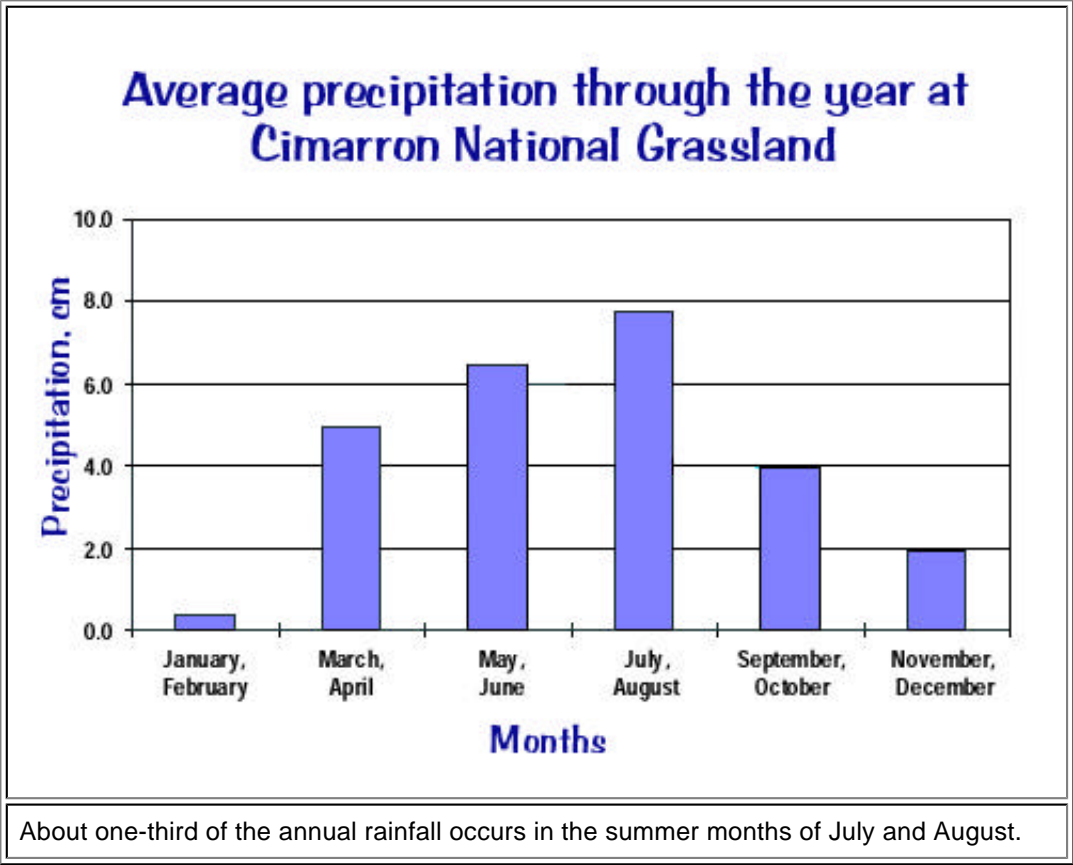
The U.S. government wanted to stabilize the soil so the land could be used again for agriculture. Healthy grasslands reduce soil erosion and water runoff and provide a dependable supply of summer forage for livestock and wildlife. The U.S. Congress approved the Bankhead-Jones Farm Tenant Act in 1937, allowing the government to buy some of this unproductive land with loose soil. The land was first administered by the U.S. Soil Conservation Service and in 1954 was turned over to the U.S. Department of Agriculture Forest Service. The former Point of Rocks Ranch became Cimarron National Grassland in 1960. It is the largest tract of public land in Kansas.

Cimarron National Grassland is now a mixed-grass and shortgrass prairie. Riparian plant communities occur along the Cimarron River. [Pronghorn antelope](#), [bison](#), [white-tailed deer](#), and [cattle](#) graze the land. This section of Kansas is at the heart of a major bird migration route. The surrounding land is primarily agricultural, so Cimarron National Grassland serves as an important wintering island for birds.

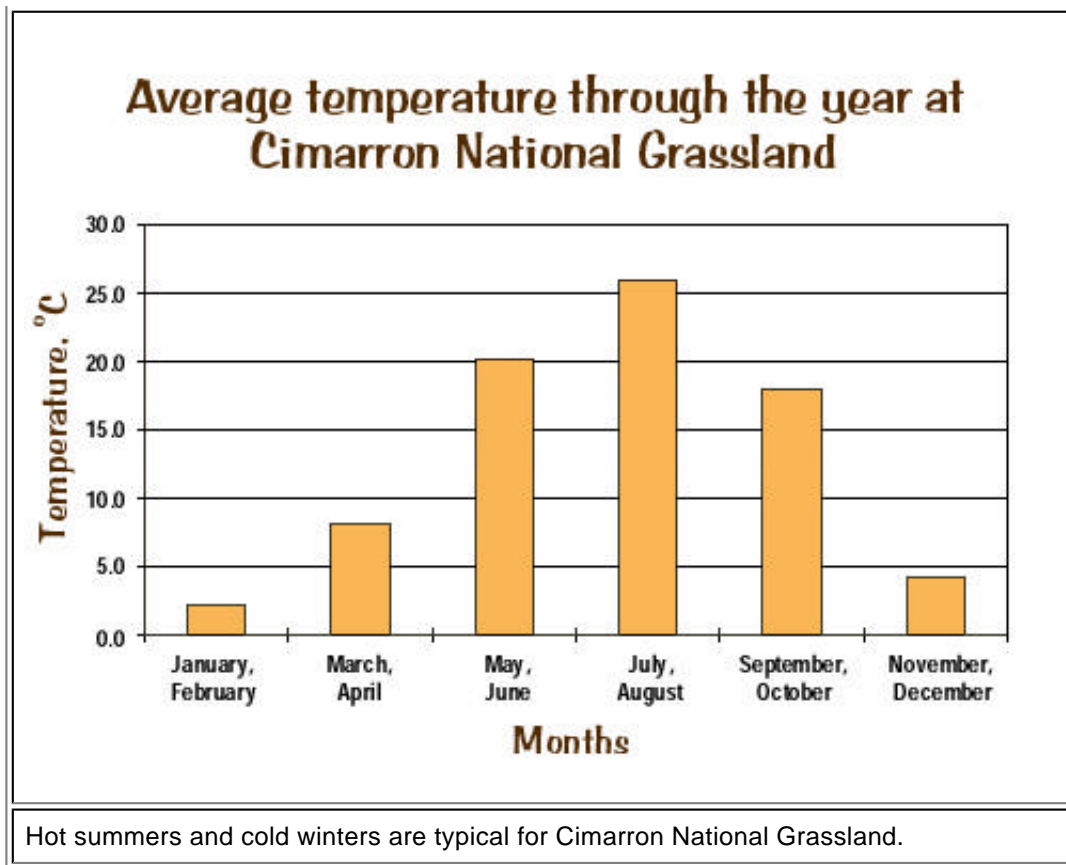
ABIOTIC DATA

The climate of Cimarron National Grassland is semiarid, with warm summers and cold, dry winters. Winds blow across the grasslands, which makes the soil even drier. The growing and grazing season in this ecosystem is between April and September.

Cimarron National Grassland receives only around 25 centimeters (10 inches) of precipitation annually. Winds blow across the prairie at speeds up to 24 kilometers per hour (15 miles per hour). Moving air increases the rate of evaporation, causing plants to use water more quickly.



More precipitation falls during the summer than winter. Summer temperatures average 25°C (77°F); winter temperatures average 3°C (37°F). Precipitation can fall as rain or snow.

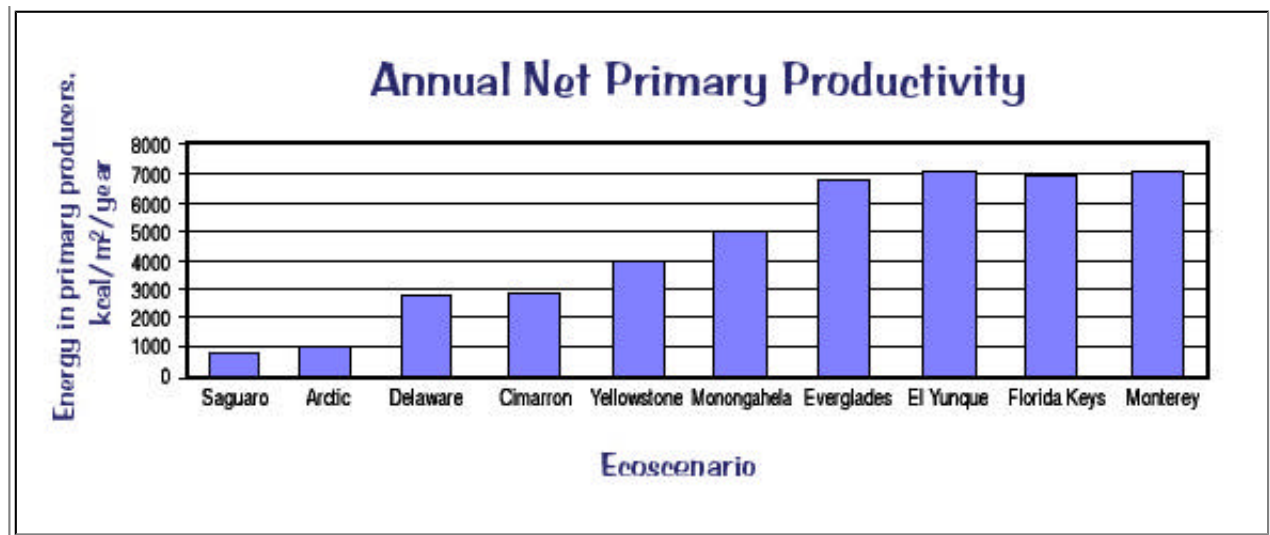


Grass fires are an essential part of grassland ecosystems. Fire quickly breaks down organic material and returns minerals to the soil. Fires start naturally from lightning strikes. They quickly burn through dead grass and forbs and are spread by high prairie winds. Native Americans understood the importance of grass fires and often set them. They used them to clear lands and drive [bison](#) herds to areas where they were easier to kill. Until homesteaders actively fought the fires to protect buildings and crops, grass fires annually swept across the prairie.

BIOTIC DATA

Cimarron National Grassland is a shortgrass prairie grassland. The landscape is dominated by wide expanses of grass-covered prairie. Some of the dominant grasses are [blue grama](#), [side-oats grama](#), and [buffalo grass](#). Side-oats grama is the tallest, growing 0.3–1 meters (1–3.5 feet) tall. It makes excellent nesting material for birds and small rodents and the seeds and leaves are good forage. Blue grama is a little bit shorter, growing 0.3–0.6 meters (1–2 feet) tall. It is also good forage and nesting material. Buffalo grass is shortest, only 10–30 centimeters (4–12 inches) tall. It spreads across the ground with creeping runners called stolons. While buffalo grass is a poor forage and nesting material for birds and small mammals, it is important food for [pronghorn antelope](#), [bison](#), [cattle](#), and other grazing animals. The root systems of prairie grasses grow deeply into the soil. The deep roots survive fires that destroy the exposed top.

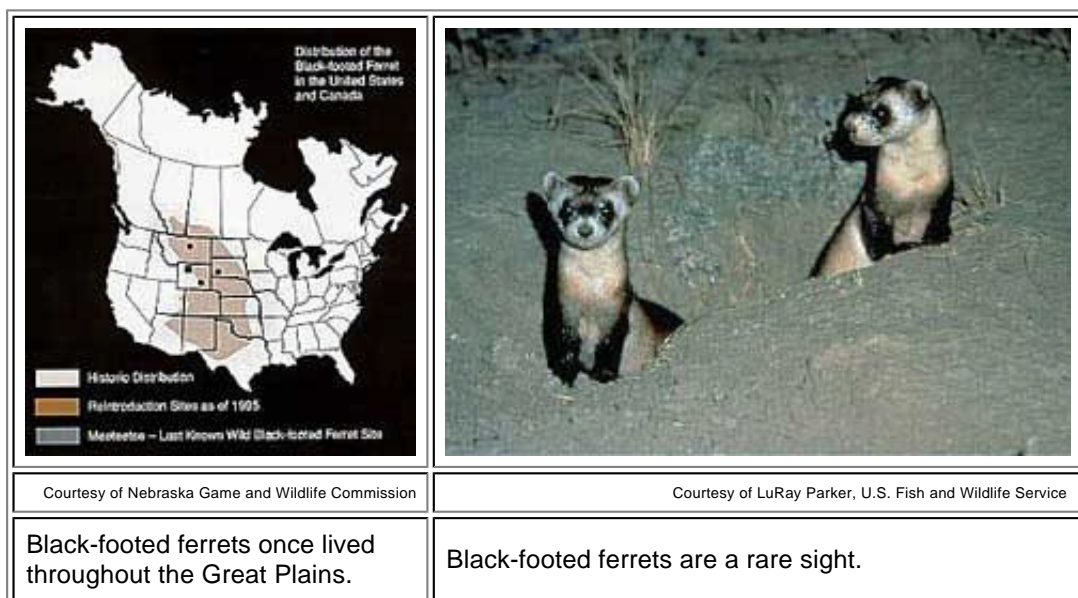
Other range plants found growing among the grass at Cimarron are [western ragweed](#), [common sunflower](#), [prickly pear cactus](#), sagebrush, and [western buckwheat](#). A few trees dot the landscape, such as the [cottonwood tree](#), Osage orange, and eastern red cedar. Trees are usually found growing along stream banks, near water wells, or near ponds. Most sapling trees in the open grassland burn before they can grow large enough to withstand a grass fire.



Some of the birds found at Cimarron are [western meadowlark](#), [horned lark](#), [ferruginous hawk](#), [golden eagle](#), and the [lesser prairie chicken](#). The larks and lesser prairie chickens depend on the seeds produced by the grasses and other range plants. Prairie chickens were once extremely abundant in Cimarron, but their numbers have declined since the 1800s. Their decline is primarily the result of habitat loss, as land was cleared for agriculture. The use of herbicides and increased periods of drought have further reduced their habitat.

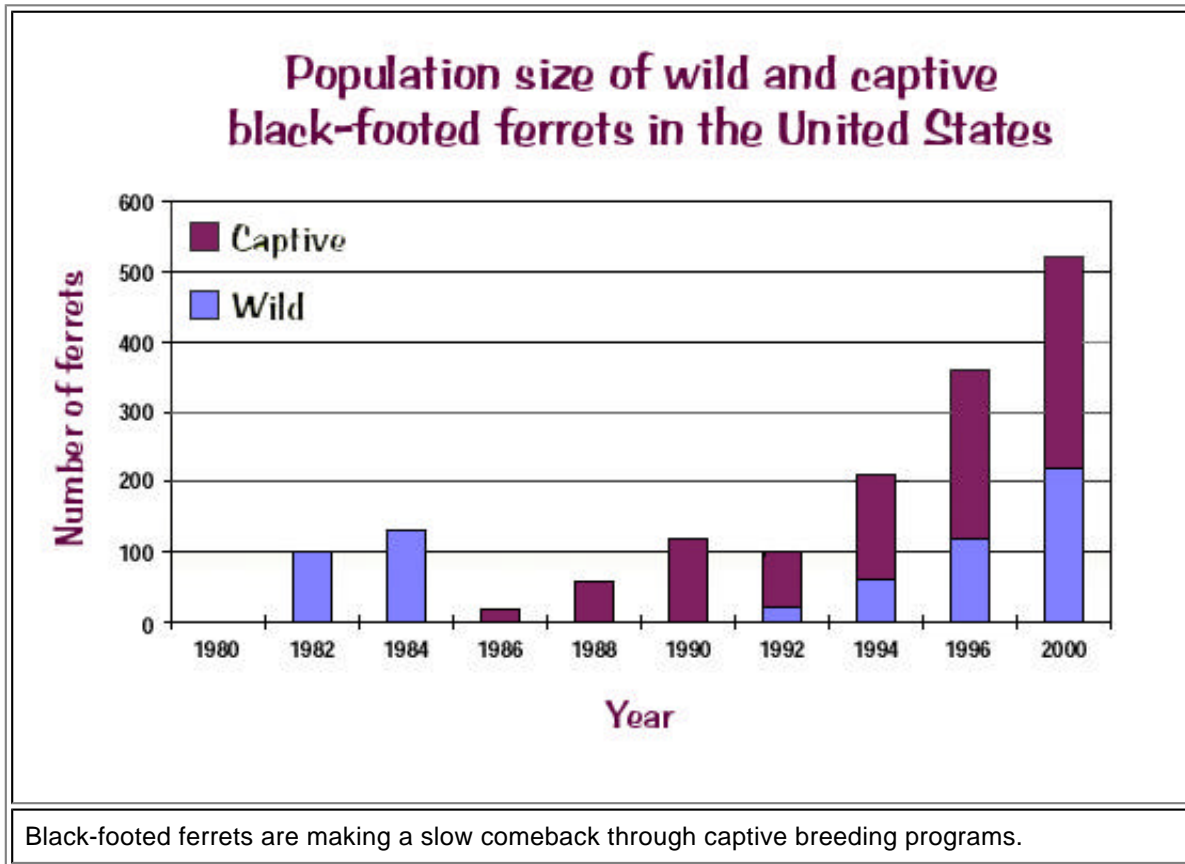
Prairie dog towns were once common on the shortgrass prairie. [Black-tailed prairie dogs](#) live in a network of underground tunnels and chambers. Multiple entrances help ventilate the town and provide escape routes from predators and grass fires. A large prairie dog town may cover thousands of acres. In the late 1800s it is estimated that 280 million hectares (700 million acres) of the Great Plains was covered by prairie dog towns. Today 90–95% have been lost to agriculture or human development. There are only about 610,000 hectares (1.5 million acres) of prairie dog towns today. Their burrows are also home to [black-footed ferrets](#), whose primary food source is prairie dogs. As the prairie dog towns declined, so did the populations of ferrets.

Ranchers see prairie dogs as pests. Prairie dog towns make rangeland unusable by cattle. Few plants grow in prairie dog towns, and the ground is filled with holes that cattle may step in and injure themselves. Ranchers and recreational hunters often kill prairie dogs. When traps or baits are used, these also kill the black-footed ferrets. The reduced numbers of prairie dogs in a town means that there is less food for the ferrets.



The [black-footed ferret](#) is the rarest mammal in North America. The Endangered Species Act protects endangered




animals like the black-footed ferret by outlawing hunting of the animals and conserving important habitat.



The black-footed ferret was thought to be extinct in the wild until a population was discovered in Wyoming in 1981. Today, captive breeding programs at zoos around the United States are helping the ferret make a comeback. In 1991, some black-footed ferrets were released into the wild in Wyoming, Montana, and South Dakota. Small populations of ferrets, about 220 animals, can be found in these states.

The shortgrass prairie is also home to [plains pocket gophers](#). They live underground, but not in elaborate tunnels like prairie dogs. Pocket gophers have fur-lined cheek pouches where they carry grass seeds they collect. [Prairie rattlesnakes](#), active year round, may search all these burrows and tunnels for food.

The [swift fox](#) and [black-tailed jackrabbit](#) are small mammals found in Cimarron National Grassland. The swift fox, sometimes called a kit fox, is an omnivore. It can run 40 kilometers per hour (25 miles per hour) over small distances. The black-tailed jackrabbit is actually a hare. It lives in social groups of 25–30 and is active at night. Jackrabbits do not live in burrows. Both the swift fox and jackrabbit rely on speed and quick direction changes to escape predators.

		
Courtesy of Doug Canfield, U.S. Fish and Wildlife Service	Courtesy of Jack Dykinga, U.S. Department of Agriculture	Art Explosion
Black-tailed prairie dog	Pronghorn antelope	American bison

The [American bison](#), the largest land animal in North America, has roamed the prairie since prehistoric times. It has been estimated that 30–200 million bison roamed the Great Plains in the 1700s and 1800s. With the westward expansion, bison were slaughtered for meat and hides. By 1885 there were only 500 bison left. They were at the brink of extinction, but in protected areas like Cimarron National Grassland they have recovered. There are now more than 65,000 bison.

The grassland is also home to [elk](#) and [pronghorn antelope](#). Pronghorns are extremely fast runners, able to maintain speeds of 110 kilometers per hour (70 miles per hour) for up to 4 minutes. A more usual cruising speed for them is 50 kilometers per hour (30 miles per hour).

ISSUES

One issue in Cimarron National Grassland is how to deal with rangeland fires. Some people view fire as beneficial to the ecosystem, and believe it is a tool for management. Others feel fire is dangerous, and should be put out quickly.

Fire ecosystems like Cimarron National Grassland

Many ecosystems are adapted to fire. Natural fires caused by lightning help shape the grassland landscape. Fires move across the prairie quickly, burning dead grass, but not getting hot enough to damage the root system. Sapling trees trying to get a foothold in the grassland are destroyed in grass fires. Few animals are lost, as most can flee the fires. Grass quickly grows back, and animals return to a renewed, lush grassland.

Fires affect animals in various ways. Most are able to outrun the fires, but a few slower animals may have trouble escaping a fast-moving fire. Fire also destroys the cover small mammals use to hide from predators. Animals that can fly or run from the immediate danger of the fire may benefit. Once the animals disperse from the burned area, their numbers are less concentrated. Disease cannot spread as easily, so there are fewer deaths due to illness. Burrowing animals, like prairie dogs and pocket gophers, or species that live near water, like amphibians, may be unaffected by fire.

Many species of birds, such as the bobolink, [western meadowlark](#), and grasshopper sparrow, thrive in the open grassland meadows with no woody vegetation. They avoid areas that have been recently burned, but return when grasses regrow.

	
Courtesy of University of Nebraska Cooperative Extension	Courtesy of University of Nebraska Cooperative Extension
Fires are now set in grasslands as part of management practices.	Prescribed grass fires are closely monitored to prevent uncontrolled burning.

Fire policy

Historically, the western United States was covered with huge areas of grassland. Native Americans used fire to stimulate grass growth and to herd bison. Early settlers used fire to clear land for agriculture. But after lands were cleared, fires were suppressed to protect crops and structures. Fire destroyed food sources and habitat for animals, which the public thought would be bad for the ecosystem. In 1935, the U.S. Forest Service set a goal of making sure all fires were out by 10 a.m. the following day. This disruption to the natural recycling of nutrients may have been one of the contributors to the depletion of the soil in the 1930s Dust Bowl.

The suppression of fire also allows dead grasses and debris to build up. Woody trees and shrubs start to invade grasslands. This sets the stage for larger and hotter fires. Hot, intense fires destroy root systems and sterilize the soil. It may take many years for grasses to regrow and wildlife to return following an intensely hot fire.

As the importance of fire was better understood, a policy called "back to nature" or "let it burn" was adopted by the U.S. Forest Service and the National Park Service. In this policy, forest and grassland fires were permitted to burn themselves out. Many Americans criticized this policy after one-third of Yellowstone National Park burned 1988. The park was allowed to burn for 4 months. The only firefighting efforts were to protect buildings and structures in the park.

Better understanding of the grassland ecosystem has taught the U.S. Forest Service the importance of fire. Prescribed burning, planned and controlled, has increased over the last 40 years. This means that park managers set small, controllable fires. These fires reduce the buildup of fire fuel like dead plants. With this fuel gone, larger fires cannot spread as easily, and burn out more quickly. Prescribed burns can also help control non-native plant species and return vital nutrients to the soil.

The fires that occur in Cimarron National Grassland are called stand-replacement fires. The fire kills only the above-ground parts of the plants. Introduced plant species with shallow root systems, not adapted to grasslands, are destroyed. These controlled fires also keep down the growth of woody plants. Without fires, trees and shrubs would slowly begin to appear on the prairie, and slowly convert it to woodland.

In 2000, many wildfires burned out of control across the United States. These fires destroyed over 2.5 million hectares (6.3 million acres), mostly in Idaho and Montana. While it may seem that there are more wildfires burning in the United States than ever before, there are actually many fewer than in 1850. Overgrazing and fire suppression have led to dense thickets of trees and shrubs in some areas, which differ from the open forests and grasslands found before 1900.

	
Art Explosion	Art Explosion
Many ecosystems are adapted to fire.	Fires move quickly across an open grassland. The fire does not get hot enough to destroy roots of native grasses.

One of the keys to restoring an area like Cimarron National Grassland is returning the area to its natural cycle of burning. The National Forest Service plans burns well in advance. Prescribed fires in spring 2001 ranged from 2 to 200 hectares (5 to 500 acres), and covered a total of 884 hectares (2185 acres). The most common size was an area of 130 hectares (320 acres).

All fires in Cimarron National Grassland are regulated. Visitors cannot build open fires. To cook food or to stay warm, park visitors must use charcoal fires or gas stoves.



Courtesy of George Vanover, U.S. Department of Agriculture Forest Service

A prescribed burn is carefully set to reduce the amount of fuel in an ecosystem.

THE DEBATE

Before making decisions that affect an ecosystem, it is important to gather information from a variety of sources. Below are the views of several individuals or groups that have an interest in the future of the Cimarron National Grassland. After each quote the hyperlink goes to the original source of the quote. Refer to these sites for more information.

Use the information provided to decide where you stand on this debate.

DEBATE: Should fires be permitted to burn in natural areas like Cimarron National Grassland?

People who support using prescribed fires to improve grassland

Ross W. Gorte, specialist in natural resources policy, Environment and Natural Resources Policy Division, CRS Report for Congress, Forest Fires and Forest Health

"Following the Yellowstone fires in 1988, however, the use of prescribed natural fire was halted. While one can question whether the prescriptions were sufficiently responsive to burning conditions (fuel moisture, precipitation, dry lightning, winds, etc.), the termination of prescribed natural fire policies may have been an overreaction to the public sentiment."

<http://www.cnle.org/nle/crsreports/forests/for-23.cfm>

U.S. Department of Agriculture Forest Service, Fire and Aviation Management

"Fire has helped shape North America's wild areas for thousands of years—its presence is essential for the survival of many plants and animals. We've learned that the lack of periodic fire in many wild areas increases risks to society and the environment. Much of the danger of destructive fire can be reduced through the increased application of prescribed fire and the planned use of wildland fire."

<http://www.fs.fed.us/fire/fireuse/rxfire/ecology/index.html>

George Wuerthner, Smokey the Bear's Legacy on the West

"No single human modification of the environment has had more pervasive and widespread negative consequences for the ecological integrity of North America than the suppression of fire. Fire suppression has destroyed the natural balance of the land more than overgrazing, logging, or the elimination of predators."

http://www.fire-ecology.org/research/smokey_bear_legacy.htm

U.S. Geological Survey Northern Prairie Wildlife Research Center, Effects of Fire in the Northern Great Plains: Effects of Fire on Upland Grasses and Forbs

"One of the simplest and least expensive practices to improve poor quality grassland is prescribed burning."

<http://www.npwrc.usgs.gov/resource/2000/FIRE/GRASFORB.HTM>

Douglas H. Johnson, U.S. Geological Survey Northern Prairie Wildlife Research Center: Effects of Fire on Bird Populations in Mixed-Grass Prairie: A Proposed Conservation Strategy

"Results presented here suggest a conservation strategy for the northern Great Plains involving prescribed burning. On large areas, such as wildlife refuges, only portions should be burned in any particular year, and these on a rotational basis. The same prescription would apply to smaller areas that can be considered as components in a landscape, such as waterfowl production areas. They should be burned periodically, but not all in the same year. That strategy will assure that in any given year habitats in a variety of successional stages will be available for a variety of breeding bird species."

"Although true grassland birds suffer short-term habitat losses from a burn, they do require grassland, which in turn requires periodic fire for maintenance. Several of these species have suffered long-term population declines. Moreover, they typically do not attain high densities or reproduce successfully in habitats other than grassland, as do birds in the other two categories. Furthermore, these species generally have breeding distributions centered in the grasslands of the midcontinent."

<http://www.npwrc.usgs.gov/resource/1999/firebird/conserve.htm>

U.S. Forest Service ranger

"Many plants are adapted to fire. Some plants have seeds that can only germinate after a fire, either because they need to be heated or because there is something in the smoke the triggers that response. Fires also kill shrubs and small trees that start to appear in grasslands in the absence of fire."

U.S. Department of Agriculture Forest Service, Historic Fire Regimes

http://www.fs.fed.us/r4/curlew/Caribou_main/Caribou/forest_plan/Deis/Chapter3/fire_management/chapter_3_fire_historic_fire_regimes.htm

People who are opposed to using prescribed fires in grasslands

Resident near a proposed burn area

"Look at what happened near Lewiston, California, on July 2, 1999. Even when fire personnel are there to watch the

fire, it can get out of control. I can't afford to lose my wheat fields or my home to an out-of-control fire."

Bureau of Land Management report, Procedures Not Followed in Escaped Prescribed Fire, BLM Investigative Team Concludes, July 26, 1999

"The Lowden Ranch prescribed fire jumped over control lines and burned about 2,000 acres before being controlled five days after it started. It destroyed 23 residences, as well as other structures."

<http://www.fire.blm.gov/News/press.htm>

Christina Ward, staff writer, DisasterRelief.org

"New Mexico's 'Cerro Grande' fire, as it was called, may have been one of the most controversial, sparking widespread debate about U.S. fire management policy.

"The Cerro Grande fire began as a prescribed burn in Bandelier National Monument, set by the National Park Service on May 4, 2000. It was intended to clear away dry underbrush that might ignite a more dangerous blaze later in the season. The plan backfired.

"More than 43,000 acres burned, and 25,000 people were forced to evacuate. The fire destroyed or damaged 115 buildings at the Los Alamos National Laboratory, birthplace of the atomic bomb, and came very close to a building that contained radioactive tritium."

<http://www.disasterrelief.org/Disasters/010509losalamosyear/>

National Jewish Medical and Research Center, Acrid Smoke from Raging Wildfires Hazardous to Those with Lung, Heart Diseases

"The winds that fan the flames of summertime wildfires also can distribute large plumes of thick smoke miles from the actual fire, causing lung and heart problems for those with chronic health problems.

'People closest to the fires are most at risk. That's why individuals living and working in communities near wildfires are often evacuated,' explains Lisa Maier, M.D., a physician in the Division of Environmental and Occupational Health Sciences at National Jewish Medical and Research Center."

<http://www.nationaljewish.org/news/healthtips/wildfires.html>

Homeowner near Cimarron National Grassland

"We moved to the prairie to get away from city pollution. When the prairie is on fire, it is as bad as a smog alert day in the city."

NASA Earth Observatory, First global carbon monoxide (air pollution) measurements, April 30, 2000

"Carbon monoxide is a gaseous by-product from the burning of fossil fuels, in industry and automobiles, as well as burning of forests and grasslands."

http://earthobservatory.nasa.gov/Newsroom/NewImages/images_topic.php3?topic=atmosphere&img_id=4894

Questions

- Which side of this debate do you support?
- What scientific evidence supports your position?
- After looking at the evidence, did you change your position? Please explain why.

WEB LINKS

U.S. Department of Agriculture, Cimarron National Grassland - <http://www.fs.fed.us/r2/psicc/cim/>

Bureau of Land Management report, *Procedures Not Followed In Escaped Prescribed Fire, BLM Investigative Team Concludes*, July 26, 1999 - <http://www.fire.blm.gov/News/press.htm>

Christina Ward, staff writer, DisasterRelief.org - <http://www.disasterrelief.org/Disasters/010509losalamosyear/>

Congressional Research Service, CRS Report for Congress, *Forest Fire Protection* - www.cnire.org/nle/crsreports/

[forests/for-34.pdf](#) (PDF format)

Douglas H. Johnson, U.S. Geological Survey Northern Prairie Wildlife Research Center, *Effects of Fire on Bird Populations in Mixed-Grass Prairie: A Proposed Conservation Strategy* - <http://www.npwrc.usgs.gov/resource/1999/firebird/conserve.htm>

Flora and Fauna of the Great Plains - <http://www.gpnc.org/floraof.htm>

George Wuerthner, *Smokey the Bear's Legacy on the West* - http://www.fire-ecology.org/research/smokey_bear_legacy.htm

Kansas Department of Wildlife and Parks - <http://www.kdwp.state.ks.us/>

NASA Earth Observatory, first global carbon monoxide (air pollution) measurements, April 30, 2000 - http://earthobservatory.nasa.gov/Newsroom/NewImages/images_topic.php3?topic=atmosphere&img_id=4894

National Interagency Fire Center - <http://www.nifc.gov/index.html>

National Jewish Medical and Research Center, *Acrid Smoke from Raging Wildfires Hazardous to Those with Lung, Heart Diseases* - <http://www.nationaljewish.org/news/healthtips/wildfires.html>

Nebraska Cooperative Extension EC 98-148-A, *Grassland Management with Prescribed Fire* - <http://www.ianr.unl.edu/pubs/range/ec148.htm>

Prairie Parcel Restoration - http://www-ed.fnal.gov/help/prairie/Prairie_Res/care_main.html

Ross W. Gorte, CRS Report for Congress, *Forest Fires and Forest Health* - <http://www.cnie.org/nle/crsreports/forests/for-23.cfm>

Santa Fe National Historic Trails - <http://www.nps.gov/safe/fnl-sft/webvc/vchome2.htm>

Santa Fe National Historic Trails, Point of Rocks, Cimarron National Grassland, Kansas - <http://www.nps.gov/safe/fnl-sft/photos/kspages/ptroxks.htm>

U.S. Department of Agriculture Forest Service, Fire and Aviation Management - <http://www.fs.fed.us/fire/fireuse/rxfire/ecology/index.html>

U.S. Department of Agriculture Forest Service, Fire and Aviation Management, News and Information - http://www.fs.fed.us/fire/news_info/

U.S. Department of Agriculture Forest Service, *Historic Fire Regimes* - http://www.fs.fed.us/r4/curlew/Caribou_main/Caribou/forest_plan/Deis/Chapter3/fire_management/chapter_3_fire_historic_fire_regimes.htm

U.S. Fish and Wildlife Service, Mountain-Prairie Region, *Black-Footed Ferret Recovery: At the Crossroads*, April 1995 - <http://mountain-prairie.fws.gov/feature/ferrets.html>

U.S. Geological Survey Northern Prairie Wildlife Research Center, *Effects of Fire in the Northern Great Plains; Effects of Fire on Upland Grasses and Forbs* - <http://www.npwrc.usgs.gov/resource/2000/FIRE/GRASFORB.HTM>